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Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ALBERT J. STEWART and LAWRENCE G. STANLEY

Appeal No. 2001-2019
Application No. 08/996,567

ON BRIEF

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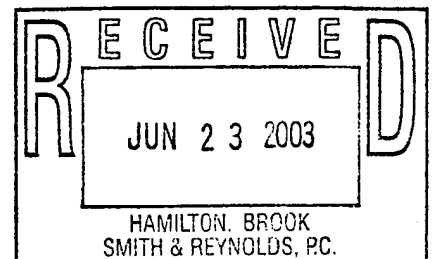
JUN 20 2003

**PAT. & T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES**

Before FLEMING, DIXON, and LEVY, Administrative Patent Judges.
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-13¹, which are all of the claims pending in this application.



¹ As correctly noted by the examiner (answer, page 3), a substantially correct copy of claim 13 appears in the appendix to the brief. In line 1, "claim" should be "claimed."

BACKGROUND

Appellants' invention relates to a building alarm system with synchronized strobes. An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced as follows:

1. A method of synchronizing audible alarms and visual strobes comprising:

connecting the audible alarms and visual strobes to common power lines and applying a voltage through the common power lines; and

thereafter, changing the voltage on the power lines to control timing of the audible alarms and visual strobes.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Markl	4,329,677	May 11, 1982
Kollin	4,365,238	Dec. 21, 1982
Right	4,499,453	Feb. 12, 1985
Tigwell et al. (Tigwell)	4,620,190	Oct. 28, 1986
Berry, III	4,881,058	Nov. 14, 1989

Claims 1, 2, 5-7, 11, and 12 stand rejected under 35 U.S.C. § 103 as being unpatentable over Berry, III in view of Markl.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Berry, III in view of Markl and Tigwell.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Berry, III in view of Markl, Tigwell, and Kollin.

Claims 8-10 and 13 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Berry, III in view of Markl and Right.

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellants regarding the above-noted rejections, we make reference to the examiner's answer (Paper No. 18, mailed December 26, 2000) for the examiner's complete reasoning in support of the rejections, and to appellants' brief (Paper No. 17, filed August 7, 2000) and reply brief (Paper No. 19, filed February 23, 2001) for appellants' arguments thereagainst. Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered. See 37 CFR 1.192(a).

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise,

reviewed and taken into consideration, in reaching our decision, appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

Upon consideration of the record before us, we affirm-in-part.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d

1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole. See id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

We consider first the rejection of claims 1, 2, 5-7, 11, and 12 under 35 U.S.C. § 103(a) as being unpatentable over Berry, III in view of Mark1. We begin with claim 1. The examiner's position (answer, page 4) is that Berry, III does not specifically state that alarm synchronization is effected by changing voltage on the power lines. To make up for this deficiency of Berry, III, the examiner turns to Mark1 for a teaching of the "desirability of allowing plural lights to be flashed in an alarm system all based on a common clocking action to assure that flashing takes place at the intended time, the activation of lights being triggered by a changing voltage level

over power lines 541, 542." The motivation offered by the examiner (id.) is that "variation between activation times of alarms could have been minimized, thus providing more uniform, less confusing alerts." The examiner adds (answer, pages 4 and 5) that:

Since Berry teaches desirability of having audible and visual alerts activated simultaneously in an emergency condition warning system, one of ordinary skill in the art would have found it obvious to use a synchronous alarm activation technique as taught by Markl to activate both audible and visual alarms, in order that more precise activation of both types of alerts could have been effected, so that a user would have been less likely to be confused by out of sync alerts.

Appellants assert (brief, page 6) that there is no indication in Berry, III of details regarding the flash lamp 310, and that at best, the flash lamp 310 would be a typical strobe that would fire when the required firing voltage is reached across a charging capacitor, and would thus be free running. Appellants argue that "[t]hus, Berry, III does not teach or suggest synchronization of audible alarms and visual strobes."

Turning to Markl, appellants assert (brief, page 6) that Markl discloses a signal light system for use along a highway, and fails to teach or suggest any type of audible alarm or any synchronization of the same. It is further argued (brief, page

6) that the combination of Berry, III and Markl fail to teach or suggest an alarm system in which an audible alarm and a visual alarm are being controlled by a change in voltage on the power lines.

We find that Berry, III is directed to an emergency alarm system with both audible and visual signal devices (col. 1, lines 14-16). A master control panel 10 connects to a plurality of alarm units 308 through a two conductor transmission line 304, 306 (col. 16, line 67 through col. 17, line 1). Control panel 10 supplies DC power on lines 20 (C,D) (col. 17, lines 39-42) and supervisory and alarm functions on lines 22 (E,F) (col. 5, lines 64-68; col. 6, lines 7-11, and figure 1). An interface module 34 (figure 2) is connected control panel 10 (col. 6, lines 42-45) and alarm units 308. As shown in figure 6, each alarm unit 308 includes an electrical lamp 310 and a loud speaker 312. The alarm units operate in one of three alarm modes: (1) solely an audible alarm mode from the units; (2) solely a visual alarm mode from the units, and (3) a combination of both audible and visual alarm modes from the units (col. 17, lines 4-8). In the absence of an alarm condition, control panel 10 provides a negative d.c. voltage on terminal E with respect to terminal F. With the coil of relay K8 deenergized, contacts K8A and K8B are in the position

shown in figure 6. Line 304 is negative with respect to line 306 which causes reverse bias to be applied to diodes 318. Blocking capacitors 316 similarly prevent current flow to the speaker transformers 312. Thus, the supervisory current flow is solely through the lines 304 and 306, and through the end of line resistor 320 in figure 6, which is the intent of the supervisory function (col. 19, lines 35-46).

The operation of the alarm system can be readily understood by referring to figures 2 and 6. When switch 320 in figure 2, which is in series with the coil of relay K8, is closed, this will give rise to operation of the flashing lights 310 only of alarm units 308 (col. 18, lines 6-11). Switch 320 is a manually operable switch that is accessible to the operator of the system (col. 18, lines 11-14). In the absence of an alarm signal from terminals E and F, closing of switch 320 will cause the coil of relay K8 to be energized, shifting the contacts of K8A and K8B to be shifted to the opposite position. This results in +24 volts d.c. being applied to alarm units 308, resulting in the forward biasing of diodes 318, thus providing d.c. power to the flashing lights 310 (col. 18, lines 14-22). Note that at this time, d.c. current does not flow through the primary of the transformers of speakers 312 due to the presence of capacitor 316. Although

diode 338 conducts, diodes 332 and 336 are reverse biased and are non-conductive (col. 18, lines 22-29). If switch 320 is now opened, K8 will be de-energized and contacts K8A and K8B to return to their original positions shown in figure 6, and the flashing lights 310 will turn off. Thus, switch 320 can be thought of as "flashing light-only" switch (col. 18, lines 29-39). Berry, III further disclose that in the event switch 320 has been closed and an alarm condition has been indicated by a reversal of the voltage on terminals E and F of control panel 10, or alternatively, a verbal message is initiated by depressing master microphone button 162, the appearance of positive voltage on the coils of relays K1 and K6 will forward bias diode 326, causing transistor 322 to cease conduction, de-energizing the coil of relay K8, and causing the contacts K8A and K8B to assume the position shown in figure 6, wherein the alarm units 308 will be supplied with audio, (either a siren-type signal or speech) on transmission line 304, 306. The audio signal in turn will be coupled through capacitors 316 and fed to speakers 312. In addition, the audio will be rectified by rectifiers 332, 334, 336, and 338 of the bridge, filtered by capacitors 314, and applied to the flashing lights 310. Thus, a combined audio and visual alarm mode will ensue (col. 18, lines 40-57). Further

control over the visual/audible alarm mode is provided by switch 330 that is connected to transformer tap 328 in figure 2. If the switch 330 is moved to the open position (solid lines shown in figure 2) the full output voltage from the secondary of transformer 288 is applied to terminals G and H of module 34, and the alarm units 308 will respond with simultaneous transmission to the speakers 312 and operation of the flashing lights 310. If the switch is then closed (dotted lines shown in figure 2) only one half the secondary voltage will be applied to terminals G and H. The speakers 312 will still respond, and by proper choice of then operating parameters of the flashing lights 310, the resultant d.c. voltage can be below the threshold voltage required for operation of the flashing lights 310 (col. 19, lines 1-24); i.e., speaker only.

From the disclosure of Berry, III we find that in a non-alarm condition, the alarm system is under supervisory control with a negative d.c. voltage on terminal E with respect to terminal F. During an alarm condition, the voltage on terminals E and F is reversed, the speakers 312 will sound an alarm and the flashing lights 310 will be turned on. We note that this disclosure of Berry, III regarding the reversal of the voltage on the terminals E and F during an alarm condition, was not brought

to our attention by either the examiner or the appellants. In addition, we find that Berry, III activates speakers 312 and lights 310 at the same time, and to the same extent as does appellants invention. As shown in appellants' figure 1, both the audible alarms A and strobe alarms S are coupled across a pair of power lines 18, 20. As set forth in appellants' specification (page 5) "[w]hen there is no alarm condition, the network 16 may be monitored by applying a reverse polarity DC voltage across the network. . . . With an alarm condition, the system controller would apply power across lines 18 and 20 with a positive polarity to cause all alarms to provide their respective audible and visual indications." Because the speakers 312 and the lamps 310 are in parallel with each other as are alarms A and S of appellants, we find that the change of voltage in Berry, III will result in the alarms being activated in the same fashion in Berry, III as appellants' alarms A and S. Thus, because Berry, III provides synchronization between the audible and visual alarms (albeit, with no synchronization among the visual alarms) we find that Berry, III discloses "synchronizing audible alarms and visible strobes" as broadly recited in claim 1. Moreover, we find that Berry, III discloses "changing the voltage on the power lines to control timing of the audible alarms and visual strobes"

because Berry, III discloses activating the audible alarms and visual alarms upon a change in voltage potential across the terminals E and F during an alarm condition. The timing is controlled because the audible and visual alarms are turned on in response to a change in voltage polarity across terminals E and F.

We are cognizant of the fact that appellants synchronize the visible alarms S by charging a capacitor to a firing voltage level that is maintained without activating the strobe, and we agree that this functionality is not found in Berry, III. From our review of Berry, III we agree with appellants (brief, page 6) that Berry, III is silent as to the details of the flash lamp. However, we find that as broadly drafted, this functionality /limitation is lacking in claim 1. Accordingly, we find that Berry, III meets the recited limitations of claim 1.

Nevertheless, assuming arguendo that Berry, III does not teach synchronization of the audible and visual alarms, and/or does not teach controlling the timing of the audible and visual alarms, upon a change in voltage, we agree with the examiner (answer, page 5) that an artisan would have been taught to synchronize and control the timing of the audible and visual alarms, as taught by

Mark1. Appellants assert that Mark1 is directed to a signal-light system for use along a highway, not an alarm system.

We find that Mark1 (col.1, lines 8-11) is directed to a signal light system, to be provided along roads and highways. Mark1 discloses that it is known to provide emergency-phone stations at intervals along the highway, that have signal light systems that are caused to blink, in order to warn drivers that they are approaching an accident or the like (col. 1, lines 8-20). More complicated versions of highway blinking light systems involve a series of emergency phone stations, at which, in the event of an upcoming traffic hazard, a first activated system may have only one of its flash lamps in blinking operation. The next station closer to the accident site has two of its lights blinking, and the station closest to the accident having three of its lamps blinking, to provide the effect of increasing urgency (col. 1, lines 47-63). Mark1 further discloses (col. 4, lines 6-17) that

In accordance with a further concept of the invention, resort is had to a synchronization or central clocking technique, to which are referenced all moments at which flashing occurs, and therefore the starts and ends of all interflash intervals, at all flash lamps of each individual station, and at all flash lamps of all stations in a series of activated stations. Although such a synchronization or central clocking technique

is not needed per se for the display effects to be implemented, it constitutes a singularly effective approach to the confusion presented by the various time-constants.

Figure 1 discloses a succession of emergency phone stations spaced at intervals along the highway between manned highway police posts (central stations) (col. 5, lines 41-45). As shown in figure 2, each emergency phone station is provided with a flashing lamp signaling subsystem comprised of four flash lamps, provided on an L-shaped bracket (col. 6, lines 62-68). Markl further discloses (col. 8, lines 24-32) that "[d]epending upon the nature of the hazard involved it may be appropriate to activate a series of stations at one side of the highway only, e.g., in the case of a traffic accident or a traffic jam, or it may be appropriate to activate a series of stations at both sides of the highway, e.g., in the case of a localized stretch of fog, a localized region of road-icing, etc." Flash lamp control system is shown in figure 4. When firing voltage U_z is applied to ignition transformer $U5.1$, glow lamp $GL1$ is fired. Flash voltage U_b , applied across the two main electrodes of flash lamp $BR1$, effects firing of the latter. The firing method of figure 4 is externally triggered firing. This is in contrast to the usual method in which the moment of ignition is determined exclusively

by the instantaneous state of charge in each flash lamp's storage condenser. The triggering of the flash lamps can be triggered from the central stations by abruptly increasing or decreasing the level of the transmitted voltage (col. 10, lines 7-32). This has the great advantage of assuring that the firing instants of the flash lamps will all be referenced to a common clocking action, and in that way assure that the various firing instants all occur at the proper times and in the intended sequences. In conventional flashing lamp highway signaling systems, the difference in transmission paths creates different time constants, and the various firing instants are free running and unsynchronized with each other (col. 10, line 36 through col. 11, line 26).

From the disclosure of Markl, we find that Markl synchronizes the flashing of the emergency lights to warn motorists of traffic accidents, traffic jams, road icing, etc. Because Markl teaches the use of synchronized flashing lights to warn motorists of road emergencies, we find that Markl is related to an alarm system, and would have suggested to an artisan that the flashing lights should be synchronized to overcome the problems associated with random flashing caused by differing time constants.

We are not persuaded by appellants' assertion (brief, page 6) that Mark1 is not directed to an audible alarm or synchronization of same. We note that Mark1 was not cited or relied upon by the examiner for a disclosure or suggestion of an audible alarm, as this feature is found in Berry, III.

From all of the above, we find that the examiner has established a prima facie case of obviousness of claim 1 that not been successfully rebutted by appellants. Accordingly, the rejection of claim 1 under 35 U.S.C. § 103(a) is affirmed.

Turning to independent claim 5, we observe that claim 5 does not require synchronization. We affirm the rejection of claim 5 based upon our findings, supra, with respect to Berry, III and Mark1.

Turning to independent claim 11, we observe that claim 11 neither requires synchronization nor timing control. We affirm the rejection of claim 5 based upon our findings, supra, with respect to Berry, III and Mark1. Accordingly, the rejection of claims 1, 5, 6, 11, and 12 under 35 U.S.C. § 103(a) is affirmed.

We turn next to dependent claims 2 and 7. Appellants assert that claims 2 and 7 are allowable due to their dependency upon claims 1 and 5. The examiner provides reasons (answer, page 7) as to why claims 2 and 7 are considered to be unobvious over the

prior art. In view of appellants lack of assertion of error on the part of the examiner, we make reference to our findings, supra, with respect to Berry, III and Markl and affirm the rejection of claims 2 and 7 under 35 U.S.C. § 103(a).

We turn next to the rejection of claim 3 under 35 U.S.C. § 103(a) as unpatentable over Berry, III in view of Markl and Tigwell. Appellants (brief, page 7) acknowledge that Tigwell teaches the utilization of a synchronizing signal to simultaneously flash plural lights, but assert that "there is still no teaching or suggestion in any of the cited reference to combine them in a way such that the voltage is changed on the power lines to control the timing of the visual and audible alarms." We observe that appellants' argument is directed to the limitations of claim 1, from which claim 3 depends. In view of our findings, supra, with respect to Berry, III, Markl, and the teachings of Tigwell of providing a synchronizing signal to synchronize a plurality of lanterns (col. 1, line 67 through col. 2, line 2 and col. 2, lines 3-7), we are not convinced of any error on the part of the examiner. Accordingly, the rejection of claim 3 under 35 U.S.C. § 103(a) is affirmed.

We turn next to the rejection of claim 4 under 35 U.S.C. § 103(a) as unpatentable over Berry, III, Markl, Tigwell and Kollin. Appellants (brief, page 7) do not dispute the findings of the examiner (answer, page 5) with respect to Kollin, but rather argues to the effect that Kollin does not make up for the deficiencies of Berry, III, Markl, and Tigwell. In view of our findings, supra, with respect to Berry, III and Tigwell, and the reasons in support of the rejection found on pages 5 and 6 of the answer, we are not convinced of any error on the part of the examiner and agree with the examiner that the teachings of Berry, III, Markl, Tigwell and Kollin suggest the language of claim 4. Accordingly, the rejection of claim 4 under 35 U.S.C. § 103(a) is affirmed.

We turn next to the rejection of claims 8-10 and 13 under 35 U.S.C. § 103(a) as unpatentable over Berry, III in view of Markl and Right. Appellants assert (brief, page 8) that claim 8 recites that the capacitor is charged "to a firing voltage without activating the strobe," and that the cited references fail to teach this limitation. We agree. We find that although Berry, III discloses that a change in the voltage on lines E and F during an alarm condition activates the speakers 312 and the flashing lights 310, we find no teaching in Berry, III, Markl or

Right would have taught or suggested charging the capacitor to a firing voltage without activating the strobe. Accordingly, the rejection of claims 8-10 under 35 U.S.C. § 103(a) is reversed.

With regard to claim 13, which depends from claim 11, the examiner presents reasoning (answer, page 6) as to why the examiner considers claim 13 to be met by the prior art. Claim 13 contains language identical to claim 2. In view of our findings, supra, with respect to claims 2 and 11, and the lack of any arguments by appellants, we are not convinced of any error on the part of the examiner. Accordingly, the rejection of claim 13 under 35 U.S.C. § 103(a) is affirmed.

CONCLUSION

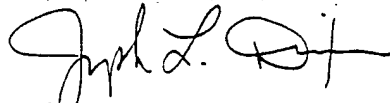
To summarize, the decision of the examiner to reject claims 1-7 and 11-13 under 35 U.S.C. § 103 is affirmed. The decision of the examiner to reject claims 8-10 under 35 U.S.C. § 103(a) is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136 (a).

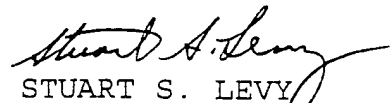
AFFIRMED-IN-PART



MICHAEL R. FLEMING
Administrative Patent Judge



JOSEPH L. DIXON
Administrative Patent Judge



STUART S. LEVY
Administrative Patent Judge

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